of exchange with the outside air, because seals were lacking around the door, that the installed system could not maintain a low radon level in the room. This system was also intended to reduce the level of radioactive argon, ^{41}A, produced on site, but the levels of both radon and ^{41}A remained variable.

Later (1957) a second iron room was assembled in the A-Wing basement of Building 203. Ultimately three such rooms were on the site, for a third constructed in Building 202 was operating by 1958. These shielded rooms, NaI(Tl) crystals, and multichannel analyzers allowed measurements of radium body burden at far lower levels than ever before (Figure 8). This capacity improved the accuracy of the results and allowed meaningful measurements to be made on radium subjects with levels too low for earlier evaluation methods.

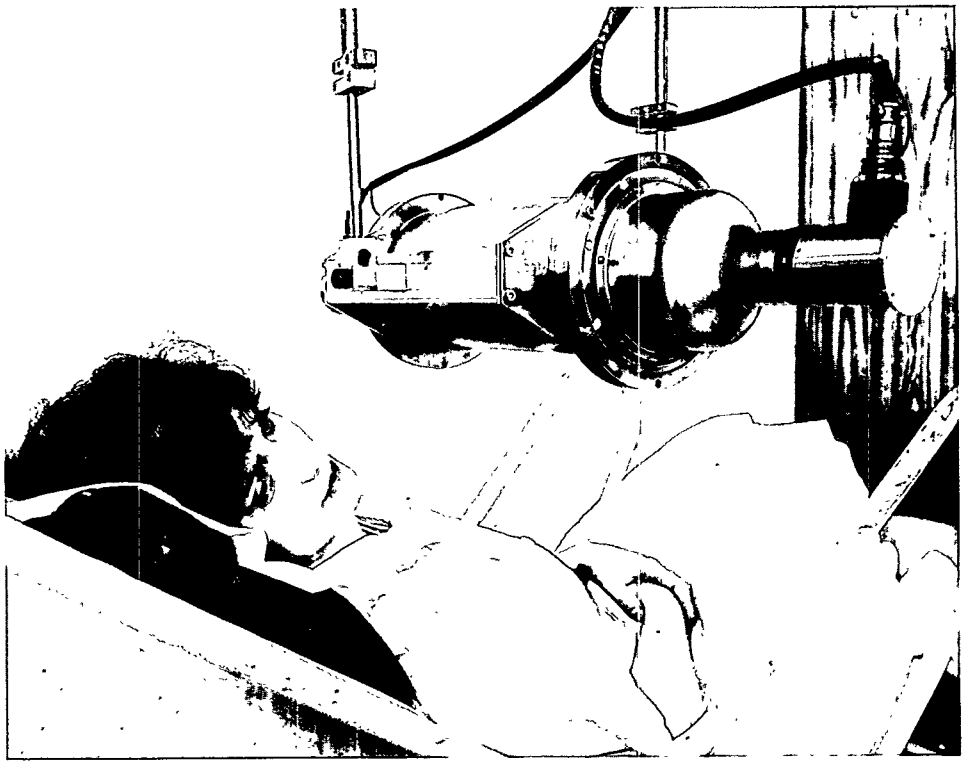

FIGURE 8 Inside the whole-body counter in Argonne's Center for Human Radiobiology, a patient is ready for a measurement of gamma rays emitted from her body. The patient wears clean clothing supplied by the Center and reclines on a metal chair beneath the cylindrical NaI(Tl) crystal that serves as the detector.